

IN THE CLAIMS:

Claims 1, 2, 16, 17, 25, and 27 have been amended. Claims 7, 10, 11, 13, 19, 22 and 26 have been withdrawn. Claim 24 has been canceled. New claims 29-34 have been introduced into the application. All of the pending claims 1 through 23 and 25 through 34 are presented below. This listing of claims will replace all prior versions and listings in the application. Please enter these claims as amended.

Listing of the Claims:

1. (Currently amended) A flexible spinal needle catheter assembly ~~having an outside diameter sized so that withdrawal of the flexible spinal needle assembly from dura mater of a spine, subsequent to insertion of said assembly through the dura mater, permits the dura mater substantially to reseal a space formerly occupied by the flexible spinal needle assembly, said flexible spinal needle assembly comprising:~~

a flexible needle catheter, said flexible needle catheter defining a hollow bore for conveying medicating agent therethrough, said bore extending through a length of said flexible needle catheter, said flexible needle catheter having a proximal end which defines a leading edge;

a support needle releaseably secured to said flexible needle catheter, said support needle being disposed within said hollow bore of said flexible needle catheter, said support needle having a first end defining which defines a pencil point, non-cutting piercing point configured for penetrating the dura mater of a patient, said support needle having an outside diameter sized so that upon withdrawal of the flexible spinal needle catheter assembly from a dura mater of a spine of a patient, subsequent to an insertion of said assembly through the dura mater, a puncture opening produced by said insertion is of dimensions which permit the dura mater substantially to reseal said puncture opening formerly occupied by the flexible spinal needle assembly within said dura mater, said support needle further comprising defining a hollow bore lumen which extends along a length of said support needle with and an opening, defined proximate said first end, allowing access to which communicates the environment with said bore lumen; and

~~a flexible needle slidably mounted on a portion of said support needle~~ being dimensioned such that said first end of said support needle ~~protrudes~~ is positioned outside of said bore of said flexible needle catheter from said flexible needle exposing said non-cutting piercing point and said opening being positioned outside of said bore, and

a solid stylet, releaseably secured within said lumen, said stylet being positioned in a first condition to preclude access from the environment to said lumen through said opening .

2. (Currently amended) The flexible spinal needle assembly of claim 1, wherein said ~~non-cutting piercing point comprises a pencil point tip and~~ said leading edge of said flexible needle catheter is positioned proximate said pencil point tip ~~a flexible needle body of said flexible needle is of such substantial axial extent to be further extendable into the dura mater upon extraction of said support needle.~~

3. (Previously presented) The flexible spinal needle assembly of claim 1, wherein said flexible needle assembly has a tip configured and arranged to provide a feedback signal to indicate dural puncture.

4. (Previously presented) The flexible spinal needle assembly of claim 1, wherein: a rear end of said support needle carries a support hub having a first attach structure; and a proximal end of said flexible needle carries a flexible needle hub having a second attach structure configured to removably attach to the first attach structure carried by said support hub.

5. (Previously presented) The flexible spinal needle assembly of claim 4, wherein the first and second attach structures comprise a luer lock type connection.

6. (Previously presented) The flexible spinal needle assembly of claim 4, wherein said flexible needle hub is configured for substantially unobtrusive attachment to a patient's skin by way of an intermediary adhesive element.

7. (Withdrawn) The flexible spinal needle assembly of claim 4, wherein said flexible needle hub is configured for attachment to medical fluid transfer equipment by an attachment structure to form a connection generally perpendicular to a direction of needle insertion.

8. (Previously presented) The flexible spinal needle assembly of claim 1, wherein: a rear end of said support needle carries a support hub; and a proximal end of said flexible needle carries a flexible needle hub having a detach structure configured to detach the flexible needle hub from the support hub.

9. (Previously presented) The flexible spinal needle assembly of claim 1, wherein: a proximal end of said flexible needle carries a flexible needle hub; and a rear end of said support needle carries a support hub having a detach structure configured to detach the flexible needle hub from the support hub.

10. (Withdrawn) The flexible needle assembly of claim 1, wherein said flexible needle comprises a conduit formed from a first material and radially reinforced at a distal end by a second material.

11. (Withdrawn) The flexible spinal needle assembly of claim 10, wherein said second material is selected from the group comprising a stainless steel wire and a ribbon spring.

12. (Previously presented) The flexible spinal needle assembly of claim 1, wherein said flexible needle comprises a force absorbing structure to prevent kinking when the flexible needle is overly flexed.

13. (Withdrawn) The flexible spinal needle assembly of claim 12, wherein said force absorbing structure comprises a ribbon spring.

14. (Previously presented) The flexible needle assembly of claim 12, wherein said force absorbing structure comprises a kink sleeve disposed on a portion thereof.

15. (Previously presented) The flexible spinal needle assembly of claim 1, further comprising a central stylet slidably mounted in said support needle to prevent the entry of matter through said opening proximate said first end.

16. (Currently amended) A flexible spinal needle assembly for inserting a distal end of a flexible spinal needle through dura mater into a spine of a patient, said flexible spinal needle assembly comprising:

a flexible needle;

a support needle having a proximal end and a pencil point non-cutting piercing point at a distal end, said support needle being releaseably secured to said flexible needle ~~configured to resist~~ relative motion between a said distal end of said flexible needle and said pencil point non-cutting piercing point during insertion of said flexible spinal needle assembly into a ~~the~~ patient;

wherein said flexible needle is carried exterior to said support needle to expose said non-cutting piercing point when said assembly is positioned for said inserting.

17. (Currently amended) The flexible spinal needle assembly of claim 16, wherein said flexible needle has an exterior diameter configured such that withdrawal of said flexible needle from said dura mater, subsequent to insertion of the flexible needle assembly therethrough, permits said dura mater substantially to reseat a space formerly occupied by said flexible needle, and a tip and a flexible needle body of said flexible needle are of substantial elongated extent to be further extendable into the dura mater upon extraction of said support needle.

18. (Previously presented) The flexible spinal needle assembly of claim 17, wherein: said proximal end of said support needle carries a support hub having a first attach structure; a proximal end of said flexible needle carries a flexible needle hub having a second attach structure configured to interface in removable interference with said first structure carried by said support hub.

19. (Withdrawn) The flexible spinal needle assembly of claim 16, wherein said flexible needle further comprises a radially reinforcing material located at a distal end of said flexible needle, said reinforcing material resisting peel-back of said flexible needle from said support needle.

20. (Previously presented) The flexible spinal needle assembly of claim 16, having a distal end of said assembly being constructed to provide a perceptible feedback signal when said distal end of said flexible needle penetrates said dura mater.

21. (Previously presented) The flexible spinal needle assembly of claim 16, characterized in said flexible needle hub further being configured for attachment to medical fluid transfer equipment having structure to form a luer lock type connection.

22. (Withdrawn) The flexible spinal needle assembly of claim 16, wherein a flexible needle hub is configured for attachment to medical fluid transfer equipment by an attachment structure to form a connection generally perpendicular to a direction of flexible needle insertion.

23. (Previously presented) The flexible spinal needle assembly of claim 16, wherein said flexible needle comprises a kink sleeve disposed on a portion thereof, said kink sleeve configured to prevent kinking of said flexible needle when said flexible needle is extended beyond the substantial flexure point during use.

24. (Canceled)

25. (Currently amended) A flexible spinal needle comprising:

a support needle having a pencil point, non-cutting piercing tip;

a flexible needle body comprising an elongated hollow tube, said flexible needle body configured to be slidably mounted on an exterior of ~~a~~ said support needle; and

a kink sleeve disposed on a portion of said flexible needle body, said kink sleeve being configured to prevent kinking of said flexible needle body, when said flexible needle body is bent beyond its ~~a~~ flexible structural resilience thereof during use.

26. (Withdrawn) A flexible spinal needle comprising: a flexible needle body comprising an elongated hollow tube, said flexible needle body configured to be slidably mounted on an exterior of a support needle; a flexible needle hub configured for attachment to medical fluid transfer equipment by an attachment structure to form a connection generally perpendicular to a longitudinal axis of said flexible needle body.

27. (Currently amended) A flexible spinal needle assembly comprising:

a support needle comprising a first end defining a pencil point, non-cutting piercing point, and a hollow bore with an opening proximate said first end allowing access to said bore; and

a flexible needle slidably mounted on ~~a~~ an exterior portion of said support needle such that said first end of said support needle protrudes from said flexible needle exposing said pencil point, non-cutting piercing point and said opening, wherein said flexible needle has sufficient transverse flexibility to accommodate patient torso bending movement so as to substantially reduce a patient's awareness of the presence of the flexible needle.

28. (Previously presented) The flexible spinal needle assembly of claim 27 wherein the flexible needle comprises a medical grade plastic material and a tip extending axially from the flexible needle body of said flexible needle of substantial extent to be further extendable into the dura mater upon extraction of said support needle.

29. (New) The flexible spinal needle assembly of Claim 1, wherein said first end of said flexible needle catheter is tapered into a curve to blend smoothly into the outer surface of said support needle.

30. (New) The flexible spinal needle assembly of Claim 1, wherein said first end of said flexible needle catheter is reinforced with a flat ribbon internal spring disposed within a wall of said flexible needle..

31. (New) The flexible spinal needle assembly of Claim 1, wherein said first end of said flexible needle catheter is reinforced with a metal band.

32. (New) The flexible needle catheter assembly of Claim 1, wherein said flexible needle catheter is disposed on an outer surface of said support needle.

33. (New) The flexible needle catheter assembly of Claim 1, wherein a leading edge of said flexible needle catheter is positioned adjacent to said opening in said support needle.

34. (New) The flexible needle catheter assembly of Claim 33, wherein said leading edge is positioned perpendicularly to a longitudinal axis of said support needle.